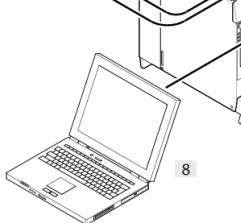


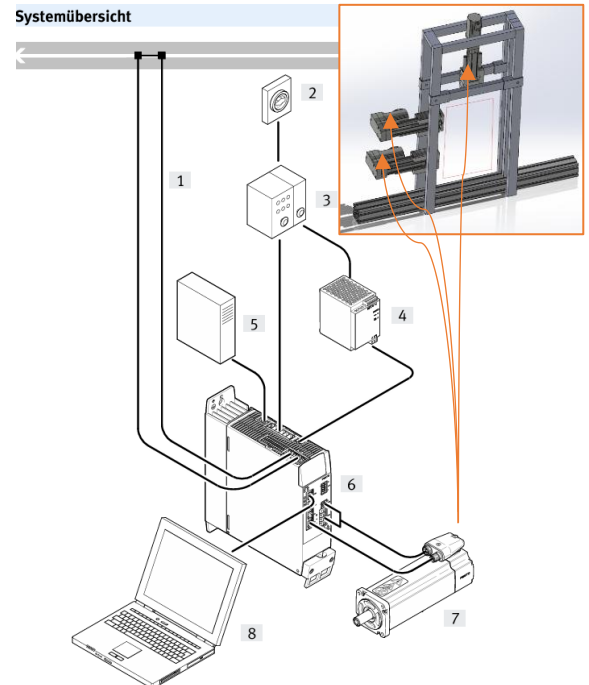
[LRG0202] Engineering Project / [LRG0003],[LRG0004] Research Practise at the Chair of Aerospace Structure Design:

Controller design for a panel buckling demonstrator

At the Chair of Aerospace Structure Design a machine for the demonstration and research of biaxial panel buckling is under development. The objective is to evaluate the mechanical stability of metal and carbon composite panels used in aerospace applications. For achieving this, compression loading must be applied onto test pieces by electric piston actuators in two axes, precisely controlled with force and position sensor data processed in real time. Within a student group project the actuation controller is to be developed and built.

The project work will contain:

- Familiarisation with the design requirements and the current design stage
 - Research and choice of sufficient commercial components
 - Introduction into the controller software environment
 - Development of an operational procedure and a suitable controller concept
 - Self-responsible coordination of work packages within your group
 - Strong communication with workshops, suppliers, other teams and supervisors
 - Assembly and operation of the design
 - Documentation of the design process in a report
 - Documentation of the functionality in a user guide
 - Presentation of the final approach and results
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Start: May 2025

Duration: 4-6 months

Scope of work: B.Sc.Aerospace: [LRG0202] *Engineering Project*,
M.Sc.Aerospace/M.Sc.Maschinenwesen: [LRG0003]/[ED100042] *Practical Research Course*,
[LRG0004]/[ED100041] *Team Project*

Working hours: flexible, weekly group meetings

Location: Campus Ottobrunn and remote

Requirements:

- great interest in automatisisation control
- willingness to work and communicate in a team
- experience with programming
- solid knowledge base in mechanics (statics, elastostatics, dynamics)
- high motivation to intensify various concerning topics

Beneficial experience:

- Python programming
- control engineering

Applications may be sent to niklas.moser@tum.de (possible also as a group of 2-3 students) as long as the vacancy is announced on the chair's webpage.